



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,459	03/12/2004	Anthony J. Hadala	1286 Hadala	7698
7590 06/03/2005 FORREST L. COLLINS POST OFFICE BOX 41040 BRECKSVILLE, OH 44141-0040			EXAMINER FRANK, RODNEY T	
			ART UNIT 2856	PAPER NUMBER

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/799,459

Applicant(s)

HADALA, ANTHONY J.

Examiner

Rodney T. Frank

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Double Patenting***

Applicant is advised that should claim 4 be found allowable, claim 5 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant is advised that should claim 5 be found allowable, claim 4 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Objections***

Claim 13 objected to because of the following informalities: The claim states a "...green temperature at another color." The examiner believes that this should read -- ...green color at another temperature.-- Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2856

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (U.S. Patent Number 6,260,414; hereinafter referred to as Brown). Brown discloses a cholesteric liquid crystal fluid level indicator that determines the level of a cooled liquid, such as beer, in a closed, opaque keg when placed in thermal contact with the exterior surface of the keg, by producing a color change that is a function of the liquid temperature when the liquid is within a predetermined temperature range, the indicator comprises a multiple level strip having a top transparent layer, liquid crystal layer, a black background layer and an attachment layer employing a protected adhesive on its bottom surface for removably attaching the strip to the keg, the instant invention employs a heat conducting adhesive on the attachment layer and for securing certain layers in the strip, such as the liquid crystal layer (Please see the abstract).

In reference to claim 1, Brown discloses and shows in figures 1 and 2, a method for determining the level of fluid in a container comprising obtaining a container (1) having an outlet for a first fluid and an inlet for a second fluid (though not specifically disclosed, this would be implied since the container is disclosed to be a beer keg); said container having a first fluid region therein (2), a first fluid being present at an original level in said first fluid region of said container, said container, for when in use, having said first fluid at least partially removed from said container thereby forming a second fluid region (4), placing on at least one exterior surface of said container at least one temperature-measuring device (10); at least one said temperature-measuring device being located in a region of said container where said second fluid region is formed by

removal of said first fluid; initially observing a first temperature in said first fluid region of said container when said first fluid is present in said first fluid region of said container; subsequently observing a second temperature in said second fluid region of said container after a portion of said first fluid has been removed; correlating the difference between said first temperature and said second temperature to the level of said first fluid in said container; and, provided further that the temperature measuring device is based on a member selected from the group consisting of a leuco dye, a clearing point liquid crystal, cholesteric liquid crystal, chiralnematic liquid crystal, and mixtures thereof (Please see column 4 line 52 through column 5 line 65 whereby the general operation of the device is basically disclosed).

In reference to claims 2 and 3, though Brown does not specifically disclose exactly the method which is used to observe the various temperature changes of the level sensor, since Brown discloses that the indicator changes color over time, then this limitation is well within the preview of the skilled artisan since observation can occur over any set interval of time desired.

In reference to claims 4 and 5, it is disclosed that the second fluid is gas in, for example, in column 12 line 49.

In reference to claim 6, Brown discloses in claim 13 a magnetized material for attaching the strip.

In reference to claim 7, Brown discloses that various sections of the indicator strip are located along the length of the container. Since the container is a beer keg, then as the beer is removed/consumed, then the gas space is created in the keg, and

Art Unit: 2856

therefore the indicator would be in a region of the gas space whereby the gas space would be the second region formed by the removal of the first fluid.

In reference to claim 9, it is disclosed in column 2 that beer is usually stored in coolers. A cooler would be considered a low humidity location. The methods of operation of the indicator are believed to be disclosed beginning in column 11 with line 17 and ending in column 12 line 64.

In reference to claims 10, 11, and 16, the first fluid (2) is disclosed to be beer, which is a liquid. In column 5 line 39, the gas is disclosed to be carbon dioxide.

In reference to claim 12, column 3 of the reference discloses how it is known in the art to pour water over a thermochromatic strip in order to activate it. The Brown reference states that the Parker reference uses hot water. However, upon reading the Parker reference, Parker actually discloses the pouring of relatively warm water, which 45-80 degrees F would be warm water.

In reference to claim 13, Brown discloses in figure 3 the various colors that the indicator may turn within specific temperature ranges.

In reference to claim 14, claim 1 of Brown discloses a level indicator that has a single color and a single measuring bandwidth.

In reference to claim 15, since the Brown reference discloses a method for measuring liquid level, then the device that utilizes said method would be obvious to one of ordinary skill in the art at the time of the invention since the device using the method would be deemed as obviously disclosed.

Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. as applied to claims 1-7 and 9-16 above, and further in view of Nakasuji et al. (U.S. Patent Number 4,028,118; hereinafter referred to as Nakasuji). Nakasuji discloses an excellent thermochromic material exhibiting a sharp and reversible metachromatism at temperatures within a range of from -40.degree. to 80.degree. C can be formed from (A) an electron-donating, chromatic organic compound; (B) a compound containing a phenolic hydroxyl group; (C) a compound selected from the group consisting of higher aliphatic monovalent alcohols; and (D) a compound selected from the group consisting of higher aliphatic monovalent acid alcohol esters. The excellent thermochromic characteristics of such a thermochromic material can be further improved when it is occluded in fine microcapsules having a size not exceeding 50 .mu.. Thermochromic polymers, thermochromic printing inks, thermochromic writing instruments, thermochromic paints and thermochromic sheets having excellent thermochromatic characteristics and wide utility can be prepared from such a thermochromic material or microencapsulated thermochromic material (Please see the abstract).

The motivation to combine the teachings of Nakasuji with those of Brown is that both utilize thermochromatic inks to indicate temperature change. Though Brown does not specifically disclose the makeup of the thermochromatic sensor, Nakasuji gives greater detail into how such a sensor could be made.

With this in mind, in reference to claims 8 and 17, beginning in column 7 with line 9 and concluding in column 8 with line 36 disclose numerous compounds used to make

Art Unit: 2856

the thermochromatic device, which numerous compounds listed in the claims are also found specifically in the Nakasuji reference.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The examiner, though not specifically used for this rejection, cites various references deemed relevant to the general state of the art of the present invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (571) 272-2193. The examiner can normally be reached on M-F 9-5:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

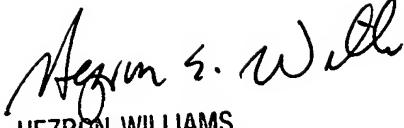
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Application/Control Number: 10/799,459  
Art Unit: 2856

Page 8

RTF  
May 27, 2005

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800